

## CLAIMS

1. A photocatalyst containing a cadmium compound, having a capsular structure and having an average particle diameter of 100 nm or less.
2. The photocatalyst according to claim 1, wherein the average particle diameter is 50 nm or less.
3. The photocatalyst according to claim 1, wherein the cadmium compound is cadmium sulfide.
4. The photocatalyst according to claim 1, characterized by supporting a Group 8 to 11 metal.
5. The photocatalyst according to claim 4, characterized in that the metal is platinum.
6. The photocatalyst according to claim 1, which has a pore extending from its surface to its interior.
7. The photocatalyst according to claim 6, which has a multiplicity of such pores.

8. A process for producing a photocatalyst, which comprises dropping a solution of a cadmium salt into a solution of a sodium compound.

9. The process for producing a photocatalyst according to claim 8, wherein the solution of a sodium compound contains sodium sulfite.

10. The process for producing a photocatalyst according to claim 8, wherein the solution of a sodium compound contains sodium sulfide.

11. The process for producing a photocatalyst according to claim 8, wherein the cadmium salt is cadmium nitrate.

12. A process for producing a photocatalyst, which comprises admixing a solution of a sodium compound in a suspension of particles of a cadmium compound.

13. The process for producing a photocatalyst according to claim 12, wherein the cadmium compound is cadmium hydroxide.

14. The process for producing a photocatalyst according to claim 12, wherein the cadmium compound is cadmium oxide.

15. The process for producing a photocatalyst according to claim 12, wherein the suspension of particles of a cadmium compound is prepared by mixing a solution of cadmium nitrate with a solution containing sodium hydroxide.

16. The process for producing a photocatalyst according to claim 15, wherein the solution containing sodium hydroxide contains a chloride.

17. The process for producing a photocatalyst according to claim 16, wherein the chloride is sodium chloride.

18. The process for producing a photocatalyst according to claim 12, wherein the sodium compound is sodium sulfide.

19. The process for producing a photocatalyst according to claim 8 or 12, wherein photocatalyst particles as obtained are caused to support a Group 8 to 11 metal.

20. The process for producing a photocatalyst according to claim 19, wherein the metal is platinum.

21. The process for producing a photocatalyst according to claim 8 or 12, which further comprises suspending photocatalyst particles as obtained in a solution containing

sodium sulfite and applying light thereto.

22. The process for producing a photocatalyst according to claim 21, wherein the light is visible light.

23. The process for producing a photocatalyst according to claim 21, wherein the light is solar or pseudo-solar light.